ABSTRACT

The present invention provides the following designing method: in a laser diode module or a depolarized laser diode module which has one laser diode and one polarization maintaining fiber connected to the output side thereof, the length of the polarization maintaining fiber is a value obtained by calculation of equation 37 with use of a longitudinal mode spacing $\Delta\lambda$output light from the Fabry Perot (FP) laser diode, an oscillating center wavelength λ_0 of the laser light, a beat length L_{Beat1} of the polarization maintaining fiber and an optical wavelength λ_{Beat} used in the measurement of the L_{Beat1}. (Equation 37)

$$L_{Pig} < \frac{\lambda_0^2}{\Delta\lambda} \times \frac{L_{Beat1}}{\lambda_{Beat1}}$$